Feb. 12, 1935. F. J. REUTER 1,990,880

BRAKE BAND

Filed March 13, 1931

Fig. 1

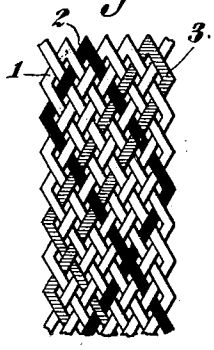


Fig. 2

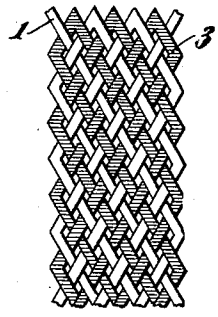


Fig. 3

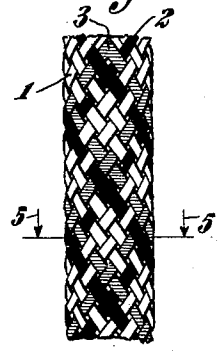


Fig. 7

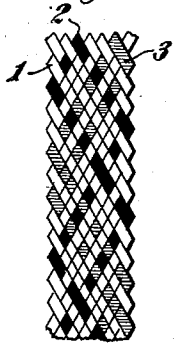


Fig. 4



Fig. 5

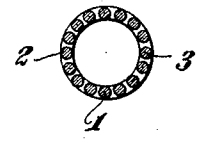
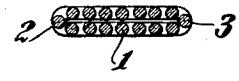


Fig. 6



INVENTOR
Francis Jean Reuter,
BY Alexander Chessin
ATTORNEY

Published by AsbestosClaims.Law
asbestosclaims.law/library/21859/1

Patented Feb. 12, 1935 1,990,880

UNITED STATES PATENT OFFICE

1,990,880

BRAKE BAND

Francis Jean Reuter, Washington, D. C., assignor to Packmat Corporation

Application March 13, 1931, Serial No. 522,393

15 Claims. (Cl. 96—25)

The present invention relates to brake bands and, more particularly, to the species of such devices adapted for use in connection with automobiles.

The invention is a modification of the inventions disclosed in my prior and copending applications Ser. Nos. 204,450 and 308,381, for packing material, showing a loosely woven mesh composed of continuous strands of a soft metal, strands of a refractory material, and strands of a yarn, such as flax, the whole impregnated with a suitable lubricant, or a similarly made up fabric from which the strands of yarn are omitted.

The present invention, which is intended for a different purpose, namely, a brake band, as against the former purpose of obtaining a packing material, differs from the inventions above referred to in several respects. The fabric is tightly woven, it contains no lubricant, and the metal strands need not be especially soft. Thus, while copper was preferably used in the packing material, any non-ferrous metal may be used in the present invention. Indeed, were it not for the fact that the brake band is usually applied to a drum made of ferrous metal, it would be quite as practicable to use strands of ferrous metal in the present device, but, the drum being of ferrous metal, the strands of a similar metal are likely to "freeze" during the braking action and impede the operation and even cause the band to break. However, should the brake band be applied to a drum of non-ferrous metal, a contingency which may arise even though it does not seem at the moment to be probable, there would be no reason for excluding strands of ferrous metal from the structure of the brake band.

The other strands of the tightly woven brake band may be of any refractory material, preferably asbestos, or a combination of such strands with strands of a suitable yarn, such, for example, as flax, preferably twisted to give it strength. The band, of course, is used dry. Should it be exposed to moisture, as, for instance, in its application to automobiles when subjected to rain, or when fording through a puddle or stream, or as the result of washing the car, heat generated by the friction between the metal strands and the metal drum will cause the asbestos and flax strands to dry and thus rapidly restore the efficiency of the brake band.

In the drawing, Figure 1 is view of one embodiment of the present invention wherein strands of metal, strands of a refractory material, and strands of a yarn are used. Figure 2 is a similar view of another embodiment of the invention wherein only strands of a metal and strands of a refractory material are used. Figure 3 is a view of a modification of the invention shown in Figure 1, the band in this case being tubular, as is shown by the cross section taken along the line 5—5 of Figure 3 and illustrated in Figure 5. Figure 4 is a similar view of a tubular form of the embodiment illustrated in Figure 2. Figure 6 is a view of the cross section shown in Figure 5 after the tubular band has been flattened out under compression. Figure 7 is a view of the brake band shown in Figure 1, as it actually looks.

In explanation of the difference between Figures 1 and 7, it should be understood that, as the strands are tightly woven, there is actually no separation between the strands, so that the band actually looks as shown in Figure 7. However, as the actual appearance of the band fails to clearly show the construction and the separate strands, Figures 1 to 6 inclusive are so drawn as to show the various strands separated, with the understanding that this departure from the actual structure is made solely for the purpose of more clearly illustrating the manner in which the strands are interwoven.

With this understanding kept in mind, in the figures, 1 is a strand of a non-ferrous metal. As explained in the preamble, the metal need not be non-ferrous, since, if the drum is non-ferrous, the metal strands may be ferrous. The metal strands 1 are intermeshed with the strands 2 of a yarn, preferably flax, twisted, and the strands 3 of a refractory material, preferably asbestos, as is illustrated in Figures 1 and 3 (also in Figure 7), or with the strands 3 alone, made of a refractory material, as is illustrated in Figures 2 and 4.

The brake band may be flat, as in Figures 1 and 2, or tubular, as in Figures 3 and 4. The tubular form has not only the advantage of greater strength, but that of reversibility. The tube, when applied to the drum, is flattened out, as is indicated in Figure 6, so that the band has double thickness. When one side is worn, the band may be reversed so that the unworn side is in contact with the drum.

In my prior applications above referred to, the strands are loosely woven in order to secure the mobility and elasticity needed in packing materials for which those inventions are intended. Moreover, the mesh was shown as impregnated with a certain lubricating compound especially adapted for the composition of the material. In the present invention, on the contrary, excessive mobility of the elements entering into the

Published by AsbestosClaims.Law
asbestosclaims.law/library/21859/2

combination would be detrimental and, accordingly, the strands are woven tightly. Some degree of elasticity, however, is preserved, owing to the general characteristics of any mesh. preservation of this slight degree of elasticity constitutes a desirable feature of the invention, since it permits the brake band to adjust itself to variable conditions of operation. It has already been stated that no lubricant, such as enters into the combination disclosed in the above referred to prior applications, is used in the present invention, for obvious reasons.

An essential feature of the present invention, as in those disclosed in my prior applications mentioned herein, is the continuity of the strands which prevents structural decomposition and causes the several strands to cooperate with one another and to maintain their combined, unitary strength. This feature is even more essential in the present invention than in those disclosed in my prior applications since, in a brake band, the strands are under heavy stresses.

I claim:

1. A brake band comprising tightly intermeshed continuous strands of a non-ferrous metal, strands of a refractory material, and strands of a yarn having the properties of flax, inclined to the longitudinal direction of said band.

2. A brake band comprising tightly intermeshed continuous strands of a metal other than the material of the drum to which the band is applied, strands of asbestos, and strands of twisted yarn having the properties of flax, inclined to the longitudinal direction of said band.

3. A brake band comprising tightly intermeshed continuous strands of a non-ferrous metal, strands of asbestos, and strands of flax, inclined to the longitudinal direction of said band.

4. A tubular brake band of yarns and of a metal other than the metal of the brake drum to which said band is applied, comprising a tightly woven mesh of continuous strands inclined to the longitudinal direction of said band and including yarns having the properties of flax.

5. A tubular brake band of yarns having the properties of flax, and of a non-ferrous metal, comprising a tightly woven mesh of continuous strands inclined to the longitudinal direction of said band.

6. A tubular brake band comprising tightly interwoven continuous strands of a non-ferrous metal, strands of a refractory material, and strands of twisted flax, inclined to the longitudinal direction of said band.

7. A tubular brake band comprising tightly interwoven continuous strands of a non-ferrous metal, strands of asbestos, and strands of flax, inclined to the longitudinal direction of said band.

8. A brake band comprising a tightly woven mesh of continuous strands, including separate strands of a yarn having the properties of flax, and strands of a metal other than the metal of the brake drum to which said band is applied.

9. A brake band comprising a tightly woven mesh of continuous strands of yarn, including separate strands of a yarn having the properties of flax, and strands of a non-ferrous metal, said strands being inclined to the longitudinal direction of the band.

10. A brake band comprising a tightly woven mesh of continuous strands and including a metal other than the metal of the brake drum to which the band is applied, and yarns of a material having the properties of flax.

11. A brake band comprising a tightly woven mesh of continuous strands and including strands of yarn having the properties of flax and a non-ferrous metal.

12. A brake band comprising tightly intermeshed continuous strands of a non-ferrous metal, strands of asbestos, and separate strands of flax inclined to the longitudinal direction of said band.

13. A tubular brake band comprising tightly interwoven continuous strands of a metal other than the material of the brake drum to which said band is applied, strands of a refractory material, and separate strands of flax, inclined to the longitudinal direction of said band.

14. A tubular brake band comprising tightly interwoven continuous strands of a non-ferrous metal, strands of asbestos, and separate strands of flax, inclined to the longitudinal direction of said band.

15. A brake band comprising tightly intermeshed continuous strands of a metal other than the metal of the brake drum to which the band is applied, strands of a refractory material, and separate strands of flax inclined to the longitudinal direction of said band.

FRANCIS JEAN REUTER.

Published by AsbestosClaims.Law
asbestosclaims.law/library/21859/3